BROADCAST® tools INC

Installation and Operation Manual

Site Sentinel™ 4

Web Based Four Channel Site Remote Control System

V2_Manual updated: December 2, 2009

For firmware versions equal to or greater than SSX_V1.22_SSW_V1.23.lxi

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INTRODUCTION

Thank you for your purchase of Broadcast Tools® Site Sentinel™ 4 Web based Four Channel Site Remote Control System (referred to as the Site Sentinel™ 4 throughout this manual). We're confident that this product will give you many years of dependable service. This manual is intended to give you all the information needed to install and operate the Broadcast Tools® Site Sentinel™ 4.

Broadcast Tools®, Inc., is unable to support NON-Broadcast Tools® hardware/software or NON-Broadcast Tools® computer hardware/software problems. If you experience these problems, please research your hardware/software instruction manuals or contact the manufacturer's technical support department.

SAFETY INFORMATION

CAUTION! Only qualified technical personnel should install the Site Sentinel™ 4. Any attempt to install this device by a person who is not technically qualified could result in a hazardous condition to the installer or other personnel, and/or damage to the Site Sentinel™ 4 or other equipment. Broadcast transmitters can operate at voltages that are potentially lethal. Please ensure that proper safety precautions have been made before installing this device. If you are unfamiliar with this type of equipment, please contact a properly qualified engineer to handle the installation and setup of the Site Sentinel™ 4.

Broadcast Tools® Products, as with any electronic device, can fail without warning. Do not use this product in applications where a life threatening condition could result due to failure. Serious injury or death can occur if a command channel is activated while you are performing maintenance on your equipment. If you are performing maintenance on your equipment, you should press the "LOCAL" button on the front panel of your Site Sentinel™ 4 forcing the unit in to local mode. The "LOCAL" LED will illuminate. Local mode prevents the unit from performing relay commands.

For additional safety, it is strongly recommended that, in addition to setting the Site Sentinel™ 4 in to "LOCAL" mode, the remote/local switch on any transmitter or high voltage equipment should also be set to local mode.

While the Site Sentinel™ 4 relays are physically capable of handling 250 VAC, this practice is extremely dangerous and should never be attempted. The removable euroblock screw terminals are not designed to shield humans from potentially dangerous voltages. Contact with high voltages can cause serious injury or death. The maximum recommended voltage for the Site Sentinel™ 4 is 30V. Switching of high voltages should only be done external from the Site Sentinel™ 4 and in a manner that isolates the voltages from accidental contact with humans.

WHO TO CONTACT FOR HELP

If you have any questions regarding your product or you need assistance, please contact your distributor from whom you purchased this equipment.

If you would like more information about Broadcast Tools® products, you may reach us at:

Broadcast Tools, Inc.
131 State Street
Sedro-Woolley, WA 98284-1540 USA
Voice: 360.854.9559
Fax: 866.783.1742
Internet Home Page: www.broadcasttools.com
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THANK YOU FOR CHOOSING BROADCAST TOOLS® BRAND PRODUCTS!

CAUTION!

Broadcast Tools® Products, as with any electronic device, can fail without warning. Do not use this product in applications where a life threatening condition could result due to failure.

NOTE:

This manual should be read thoroughly before installation and operation.

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Product Overview

The Site Sentinel™ 4 provides a cost-effective, one third-rack solution for web based site remote control. The Site Sentinel™ 4 was designed from a user's point of view, so all of the basic functionality you need is included to control your site equipment, while including the accessories other manufacturers consider optional. Each analog (metering), status/logic, stereo silence sensor, temperature sensor (probe optional), power failure inputs, along with all relays can be controlled and/or monitored over any IP network including private networks, IP-based industrial control networks, and the Internet. Users can operate the product using a web browser or web-enabled mobile device, while email notification may be configured to alert up to four recipients when alarms are detected. The user may also enable a sound effect to play on the monitoring PC when an alarm is generated. Logging of system status, along with the site ID may be emailed in time spans from once an hour to once a day. SNMP and SMTP username and passwords are also supported.

The Site Sentinel™ 4 is equipped with four buffered high-resolution 10 volt metering (analog) channels, while each of the four optically isolated status/logic channels may be configured for 5 to 24 volts DC wet or dry (contact closures) status/logic monitoring. The four control channels are equipped with independent SPST one-amp relays and may be latched on, off or pulsed with user configured timing along with user programmable action sequences. The temperature monitoring is within the range of -67°F to +257°F (-55°C TO +125°C).

The Site Sentinel™ 4 is also equipped with a power controller port. By pairing this feature with an optional external AC power control unit (such as the Mid-Atlantic RLM-15-1C, RLM-20-1C or RLM30-L530-1) remote rebooting of equipment is possible.

Additional Features

- Plug-in euroblock screw terminals for metering (analog), status/logic, control relays and stereo silence sensor.
- Jack for external power failure (optional) power supply,*
- 1/8" T/R/S mini-jack for the optional Fahrenheit or Celsius temperature sensor.*
- Stereo Silence Sensor monitoring.*
- Front panel LED indicators for most operational activities.
- Front panel local/operate switch with LED indicator.
- Rear panel RJ-45, 10/100base-T LAN/Ethernet interface.
- Fully RFI proofed.
- Surge protected power supply.
- Third rack, 1-RU high chassis.
- 120 VAC to 7.5 VDC @ 1 amp (optional 240V CE) power supply included.

* Denotes independent of the four metering (analog) and status/logic channels.

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Inspection

Please examine your Site Sentinel™ 4 carefully for any damage that may have been sustained during shipping. If any is noted, please notify the shipper immediately and retain the packaging for inspection by the shipper. The package should contain the Site Sentinel™ 4, this manual and/or CD, 7 foot BLUE straight-through CAT 5 cable, 7 foot GRAY crossover CAT 5 cable and the 7.5 VDC @ 1 amp wall transformer.

Installation

Surge Protection

The Site Sentinel™ 4 has built-in resistance to voltage changes, we recommend that you use a power surge protector or line conditioner on the incoming AC line. Lightning strikes and other high surges in voltage levels will damage your Site Sentinel™ 4 and connected equipment if it is not properly protected. For lightning protection devices, check out www.polyphaser.com and www.itwlinx.com.

UPS Standby Power System

We recommend that you connect your Site Sentinel™ 4 to a UPS system. While all operating and user parameters are stored in non-volatile EEPROM, brownout conditions and lightning induced spikes can disable or damage equipment. A UPS helps minimize the risk to the Site Sentinel™ 4 and has the added benefit that it will then be able to notify you of the power outage by email.

Front panel indicators and controls

Name	Type	Descriptio
Default	Push Button	Recessed push button used to reload factory defaults.
Status 1 - 4	LED	Illuminates when the corresponding status/logic inputs are activated.
Relays 1 - 4	LED	Illuminates when the corresponding relays are activated.
LOCAL	Push Button	Toggles between operate and local mode.
LOCAL	LED	Illuminated when the unit is in local mode.

CAUTION!

Installation of the Site Sentinel™ 4 in high RF environments should be performed with care. Shielded cable is suggested for all monitoring and control connections with all shields tied to the station/site ground terminal. The station/site ground should be connected to the rear panel (CGnd) chassis ground terminal or screw stud using an 18 or 20-gauge wire.

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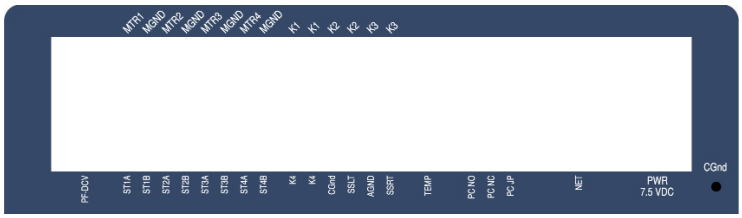
Front panel indicators and controls

Name	Type	Description
PWR/HB	LED	Illuminated when valid power is applied to the power jack.
PWR CNTR	LED	Illuminated when the relay is activated.
SS	LED	Illuminated when adequate audio is applied to the SS Input(s), OFF when the level is too low and flashing if in an SS alarm condition, if enabled.
PF	LED	Illuminated when power is applied, OFF when inadequate DC voltage is applied to the PF jack and flashing if a Power Failure has been detected, if enabled.



Rear panel connections

Name	Type	Description
PF	2.1mm Jack	Power Failure power jack (optically-isolated). 5 -12 VDC power supply optional.
MTR 1 - 4	Connector	Metering (analog) inputs one thru four (Top).
MGND	Connector	Metering (analog) ground reference terminal (Top).
ST1A - 4A	Connector	Status/logic opto-isolators. When configured for DRY, (factory default) this terminal is ground. When configured for WET (floating), this terminal is the anode via a 2.2K ohm current limiting resistor (Bottom).
ST1B - 4B	Connector	Status/logic opto-isolators. This terminal is always the cathode (Bottom).
K1 - K3	Connector	Normally Open, dry relay contacts (Top).
K1 - K3	Connector	Normally Open, dry relay contact (Top).
K4	Connector	Normally Open, dry relay contact (Bottom).
K4	Connector	Normally Open, dry relay contact (Bottom).
CGnd	Connector	Chassis ground terminal. Tie to site/station ground.

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Name	Type	Description
SSLT	Connector	Unbalanced Silence Sensor left audio input (Bottom).
GND	Connector	Silence Sensor audio ground (Bottom).
SSRT	Connector	Unbalanced Silence Sensor right audio input (Bottom). **NOTE: Left and right summed to monaural internally.**
TEMP	3.5mm Jack	Temperature probe input jack. (Temp probeoptional) 1/8" (3.5mm) T/R/S mini-jack.
PCNO	Connector	Power controller normally open relay contact.
PCNC	Connector	Power controller normally closed relay contact.
PCJP	Connector	Power controller internal function jumper.
NET	Connector	RJ45 network connector.
PWR 7.5 VDC	2.1mm Jack	System power supply input. 7.5 volts DC @ 1 amp. **NOTE: Center positive.**
CGnd	# 4 Stud	Chassis ground 4-40 stud with nut. Tie to site/station ground.

NOTE: See alternate "CGnd" chassis ground on terminal block.

Connecting your Site Sentinel™ 4 to external equipment

Metering (analog) inputs

CAUTION!
Metering (analog) input samples may be elevated several hundred volts above ground on some external equipment. Permanent damage may occur to the Site Sentinel™ 4 and/or external equipment if a high voltage metering source is connected to the Site Sentinel™ 4! Failure to observe this warning may also cause injury to the installer or other personnel. DO NOT CONNECT SAMPLE VOLTAGES IN EXCESS OF POSITIVE 10 Volts DC OR DAMAGE MAY OCCUR TO YOUR Site Sentinel™ 4.

CAUTION! Floating Grounds
Except for status/logic (wet) inputs, none of the Site Sentinel™ 4's metering inputs will accept a floating ground. Damage to the Site Sentinel™ 4 or your equipment may result from connecting a floating ground output to the Site Sentinel™ 4. If you require metering equipment with inputs that have a floating ground, an isolation DC amplifier should be used.

Four buffered metering (analog) input channels are available with the Site Sentinel™ 4 via removable euroblock screw terminals. Connect the positive side of the source to the desired channel terminal labeled MTRx (where x is the channel number 1 through 4) and associated MGND (metering ground) terminals.

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Installation

Each buffered metering (analog) input can handle up to (positive only) 10 volts DC and must be ground referenced and connected to the associated MGND ground terminal. Inputs are self-calibrating and are based on an internal A/D converter with a precision, low-drift voltage reference, so the reading should not drift over time or with temperature. Metering setup is performed by connecting the sample voltage to the MTRx and MGND metering (analog) input, then calibrate for the desired value (reading).

Status/Logic Inputs

Each optically isolated status/logic inputs can be configured to accept either a contact closure (DRY = default) or a (floating, WET) input. Attach your dry contacts to the desired status/logic channels StxA and STxB (where x is the status/logic input channel) terminals.

Each input is equipped with a four-position header (please refer to the jumper layout in the appendix). JPR1 supports status/logic input one, JPR2 status/logic input two, JPR3, status/logic input three and JPR4, status/logic input four. Each jumper (JPRx, where x is the status/logic input) and the header pins 1,2,3,4 (The pin closest to the J of the label JPRx, is pin 1) are used to configure for wet or dry operation. The factory default is DRY. (Switch, relay contact, open collector) with jumpers between 1 & 2 and 3 & 4. In the DRY configuration, the "A" terminal is ground while the "B" terminal is the cathode of the opto-isolator diode (pulled up to 5 volts through a 2.2K resistor).

To change the status/logic input to (floating) WET (user supplied voltage between 5 and 24 vdc), remove both jumpers and place ONE jumper over pins 2 & 3. Connect the positive voltage to terminal "A" (anode) and ground or minus voltage to terminal "B" (cathode). Please refer to the appendix for configuration examples.
NOTE: Please observe proper polarity.

Control Relays

Each of the four control relays are supplied with a normally open dry contact. External equipment to be controlled should be connected to the terminals labeled Kx and Kx (where x is the control relay number) for relays one through four.

Power Failure Input

Connect a user supplied 5 to 12 volts DC only power source (center positive) to the power failure input labeled PF. The barrel connector size is 2.1mm ID x 5.5mm OD. An inexpensive 5 to 12 volts DC wall transformer of any current of 25 ma or more will work.

NOTE: The primary (120vac) of the wall transformer should be connected to the utility company side of your service. An UPS is suggested to power the Site Sentinel™ 4 during power outages.

NOTE:

Valid sample voltage MUST be applied to the metering inputs in order to perform calibration.

NOTE:

If mechanical latching relays are required, we suggest the Broadcast Tools LR-5 (4PDT & SPST) mechanical latching relay.

Installation

Silence Sensor Inputs

Connect your unbalanced monaural or stereo audio source to the terminals labeled SSLT, SSRT and AGND. The level should be between -10 and +24 dbu. The input impedance is approximately 22K ohms. When the SSLT/RT input has audio applied and the silence sensor is activated, the front panel SS led is illuminated. If the SS led is out, the signal is too low and if it's flashing, it is in an alarm condition (if enabled).

TEMPerature Probe Input

Insert the OPTIONAL temperature probe (25 foot cable) mini (3.5mm) plug in to the rear panel jack labeled "TEMP" -67°F to +257°F (-55°C TO +125°C).

NOTE: Please limit the total length of cable to 50 feet. Please contact the factory for the proper extension cable. The temperature probe should only be installed or removed with the power supply disconnected from the Site Sentinel™ 4.

Power Controller Relay

The jumpers are set to provide the relay common (wiper) on the terminal labeled (PCJP). Please refer to the "Fractional Schematic" in the appendix for more jumper options.

NETWORK connector

Connect one end of the supplied CAT5 (straight or x-over) cable to the desired ETHERNET (WAN/LAN) port.

PWR 7.5 VDC (Power) connector

Connect the supplied 7.5 volt DC only 1 amp power supply cord in to the Site Sentinel™ 4's power jack (center positive) labeled "PWR 7.5 VDC", then plug the transformer in to a source of 120 vac 60Hz. Verify that the front panel green (PWR/HB) power led is illuminated.

Web Setup and Operation

Ethernet "Quick Start" guide

CAUTION! If you are not familiar with Ethernet enabled equipment, it may be useful to contact your IT department, network administrator or network consultant for assistance. Assigning an IP address already in use by another device may cause problems with your network!

Instructions for changing the IP address of the computer that will be used for the configuration of this product are given here. Note that these instructions are specifically for computers with the Windows XP operating system. For setup using other operating systems, refer to the appropriate OS user's manual.

CAUTION!

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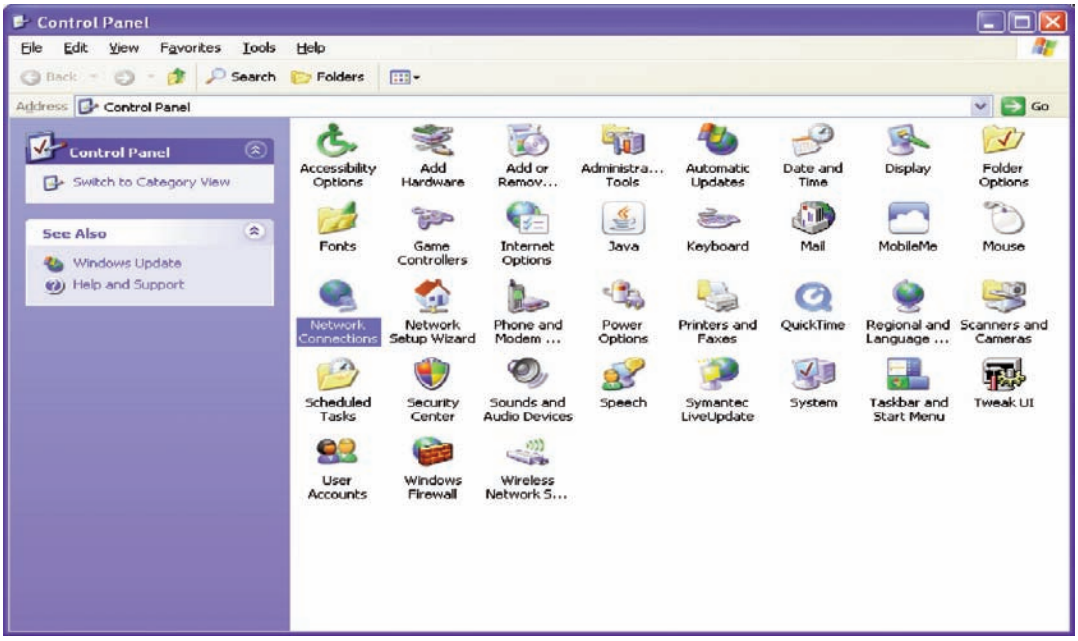
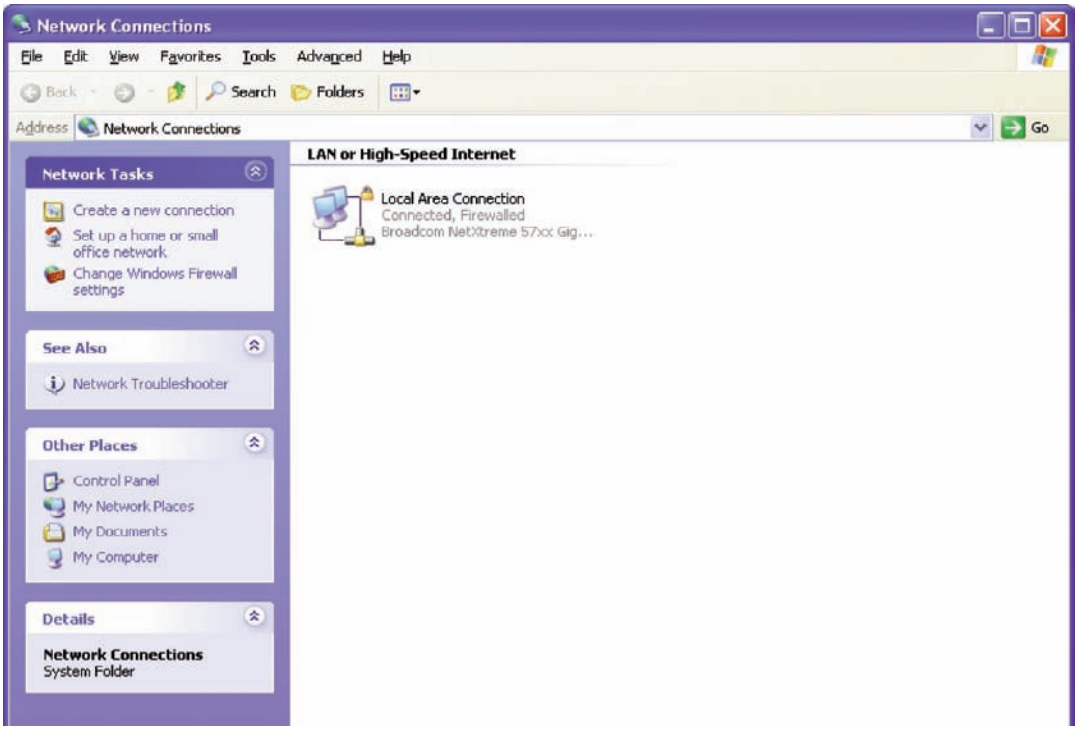
Web Setup and Operation

Ethernet "Quick Start" guide

Step 1: Open the control panel by clicking on the start menu, click on settings, then click on Control Panel. (Note that the control panel shown is in "Classic View". If control panel is in "Category View" select the "Classic View" option before proceeding.)



Step 2: Double click on the icon labeled Network Connections. The following menu will pop up.



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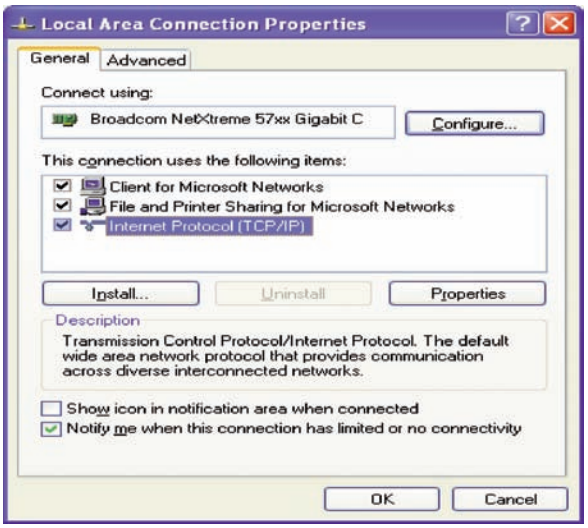
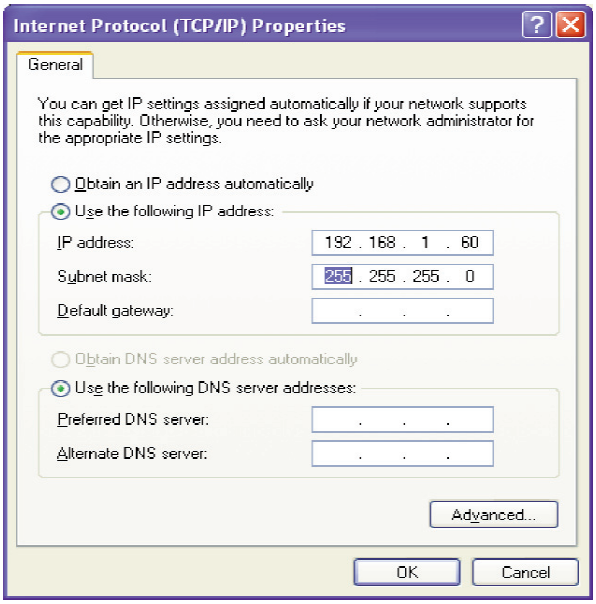
Web Setup and Operation

Ethernet "Quick Start" guide

Step 3: Right click on the icon labeled Local Area Connection. Another menu will appear. Select the option at the bottom of the menu labeled Properties. The Local Area Connection Properties window will appear.



Step 4: On the Local Area Connection Properties page, double click on Internet Protocol (TCP/IP) to display properties.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 192 . 168 . 1 . 60
Subnet mask: 255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

Step 5: Before making any changes to the network settings, write down the current settings (or screen capture the page and print) so that they can be restored once the unit is configured. Next, select the radio button labeled "Use the following IP address" and type in the IP address 192.168.1.60. Type in the subnet mask of 255.255.255.0. Leave the default gateway field blank. Click OK to apply the new settings.

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Web Setup and Operation

Opening the LOGIN Web Page

1. Connect the supplied GRAY colored XOVER cable between the PC's Ethernet port and the products "NET" network RJ45 jack.

2. Connect the supplied 7.5 VDC @ 1 amp power supply to the product's power jack labeled PWR 7.5 VDC. Verify that the green PWR/HB LED is ON and the left "LINK" LED above the "NET" Network RJ-45 connector is illuminated.

Ethernet (NETWORK) port LED indicator functions

Link LED Left Side	
Color	Meaning
Off	No Link
Amber	10 Mbps
Green	100 Mbps

Activity LED Right Side	
Color	Meaning
Off	No Activity
Amber	Half Duplex
Green	Full Duplex

3. Open the product's login page by typing the following URL into the browser: http://192.168.1.55 A username and password is required to change any parameter and are case sensitive.

Factory "login" defaults: **username: admin (lower case)**
password: 1234

4. Once you are logged in, follow this manual for setup and/or operational information.

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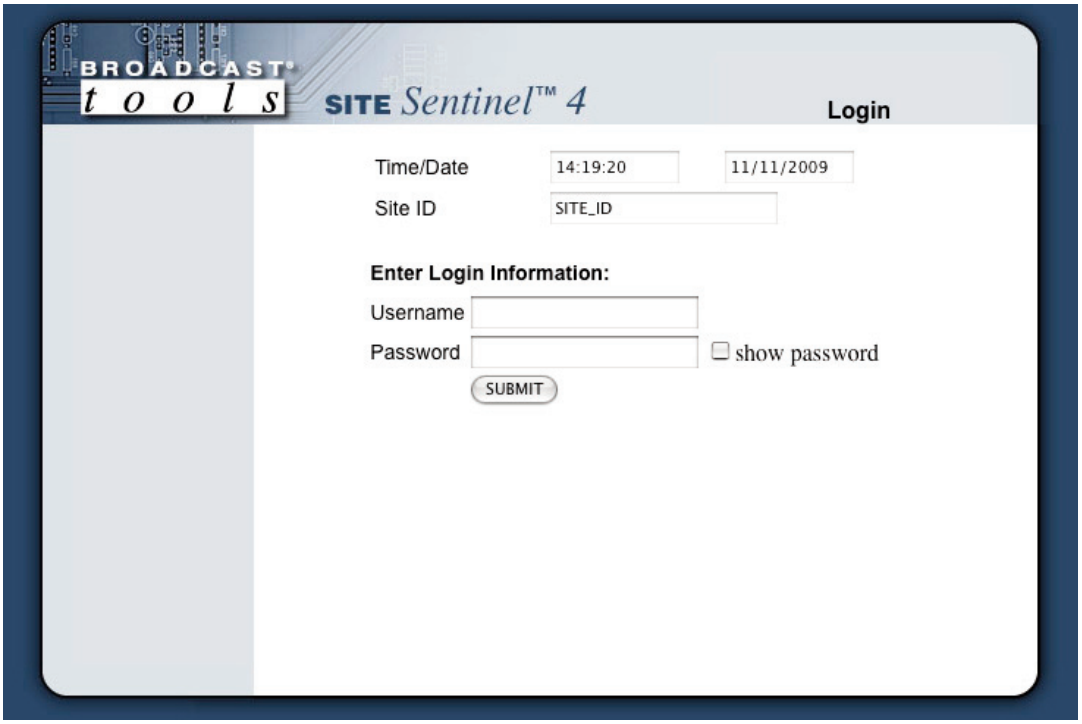
Web Setup and Operation

"Login" Web Page

The Login screen displays the Username and Password entry points.

You may view the password by checking the "Show Password" box.



After you have successfully logged in, the Monitor/Control page will be displayed. Depending on your access level, you may or may not be able to control or modify the product's configuration.

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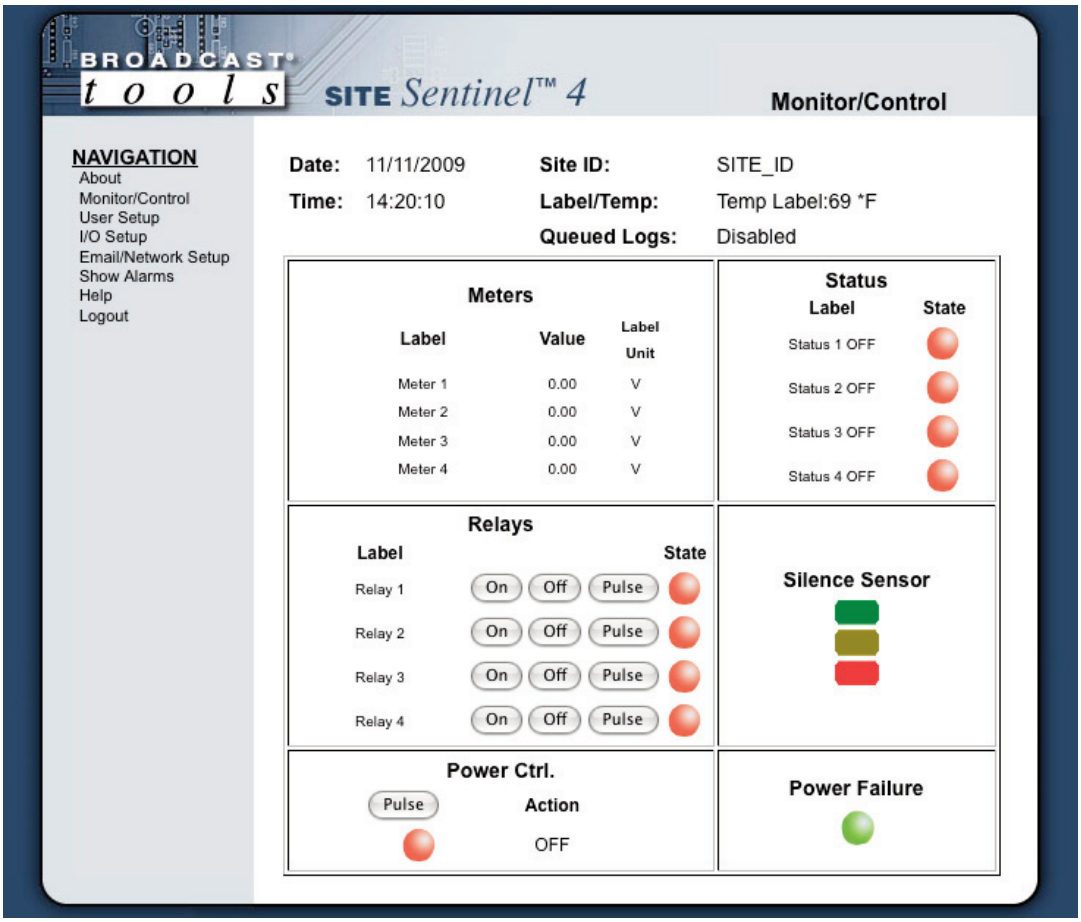
Web Setup and Operation

"Monitor/Control" Web Page



The Monitor/Control page allows the monitoring and/or control of the Site Sentinel™ 4. The following is an explanation of each item on this page:

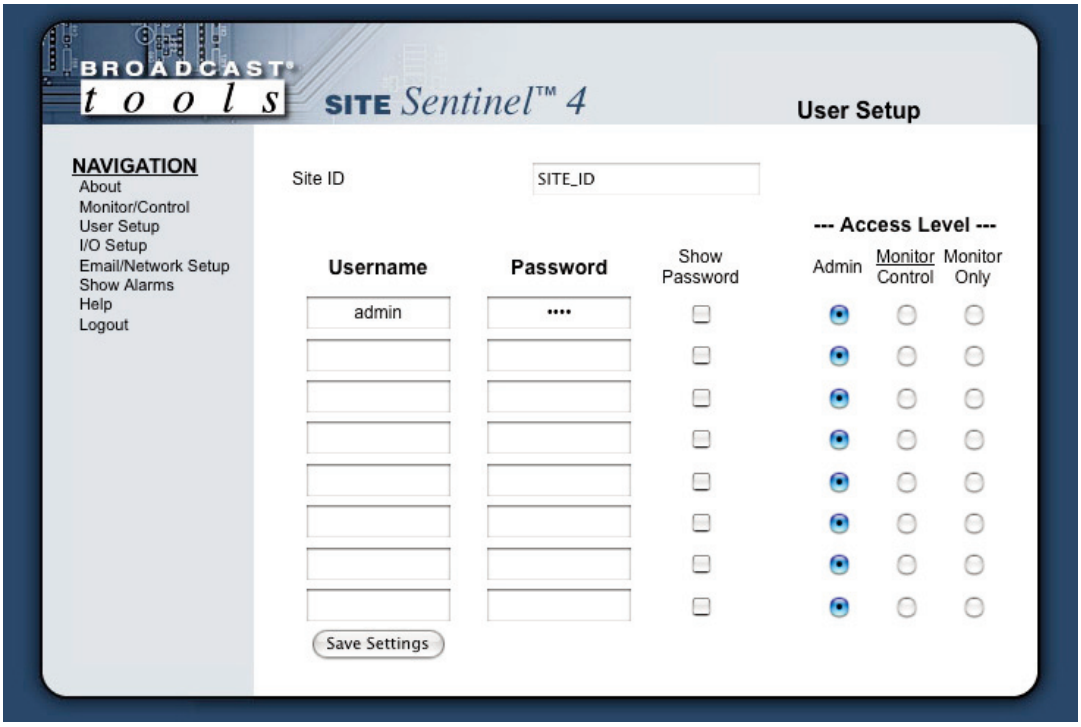
Queued Logs:	Displays the available number of queued logs.
Meters:	Four metering (analog) channels. The labels, values and units are entered in the I/O setup page.
Status:	Displays the condition of the four status/logic inputs.
Relays:	Allows the user with admin or monitor/control access to control each relay for its displayed function.
Silence Sensor Level LED's:	Displays the silence sensor input level. The green led operates from -15 and above. The yellow and red led activations are determined by the user programmed trip levels.
Power Failure	Illuminated when power is applied, OFF when inadequate DC voltage is applied to the PF jack.
Power Ctrl	Illuminated when the relay is activated.

NOTE:

The user defined Site ID, Time, Date and Queued Logs are always displayed. Only "admin" level access can edit some of these items

Web Setup and Operation

"User Setup" Web Page



This page can only be configured with (factory default) the "admin" access level.

NOTE: You may view the password by checking the "Show Password" box.

To select other pages (if authorized); make your selection under the left hand Navigation column.

Eight Usernames and Passwords may be configured for up to three access levels.

1. "Admin" allows complete product configuration access.

2. "Monitor/Control" allows the following access:
   About, Monitor/Control, Show log (unable to clear log), Help, and Logout.

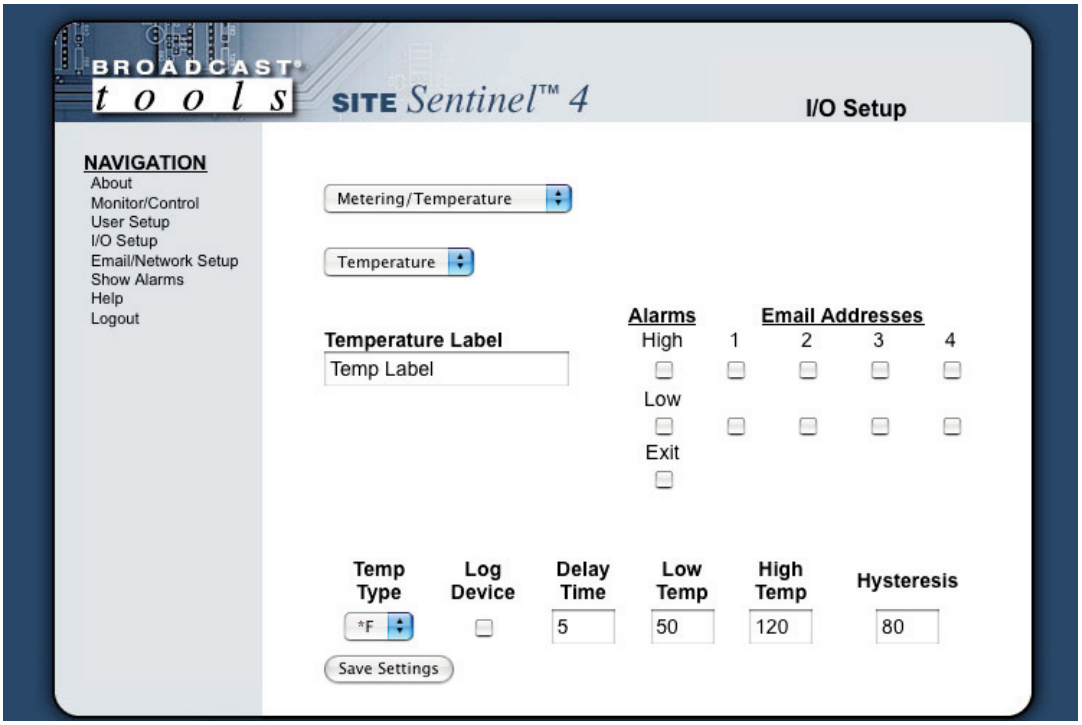
3. "Monitor Only" allows the following access:
   About, Monitor only, Show log (unable to clear log), Help, and Logout.

NOTE:

After any item has been changed, you MUST press the "Save Settings" button for your changes to be saved.

Web Setup and Operation

"I/O" Setup Page
Temperature



I/O device selection drop-down: Allows the user to select the I/O setup configuration pages.

Metering/Temperature drop-down: Allows the user to select either the temperature or metering inputs to configure.

Temperature Label: Used to identify the temperature probe.

Alarms High: This option enables the "High Temp" email alarms.

Email Addresses: The "High" boxes labeled 1,2,3,4 allows the user to enable up to four different email addresses for high alarms.

Alarms Low: This option enables the "Low Temp" email alarms.

Email Addresses: The "Low" boxes labeled 1,2,3,4 allows the user to enable up to four different email addresses for low alarms.

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Web Setup and Operation

"I/O" Setup Page
Temperature

Alarms Exit: This option enables the emailing after exiting an alarm.

Temp Type: This option specifies what scale will be displayed, Fahrenheit or Centigrade.

Log Device: This enables the email logging of temperature.

Delay Time: The delay is in (0 to 999) seconds. This option specifies the wait time from when a temperature is out of range before an alarm is activated.

Low Temp: This option specifies the LOW temperature alarm set point.

High Temp: This option specifies the HIGH temperature alarm set point.

Hysteresis: Hysteresis (deadband), This option specifies the hysteresis used when evaluating alarm conditions. Hysteresis prevents alarms from toggling excessively when temperature is at the set point. This is due to normal fluctuation. For example, if the hysteresis is set to 1 degree, and a high alarm is to occur at 91 degrees, the hysteresis ensures that once the high alarm is triggered, it won't go off until the temperature returns to below 91 degrees (90 - 1). This reduces problems with small fluctuations in temperature readings triggering multiple alarms. The hysteresis is also used during low alarm conditions. If, for example, a low alarm is to occur at 43 degrees and the hysteresis is set to 1 degree, then once the low alarm is triggered, it won't go off until the temperature returns to higher than 44 degrees (43 + 1).

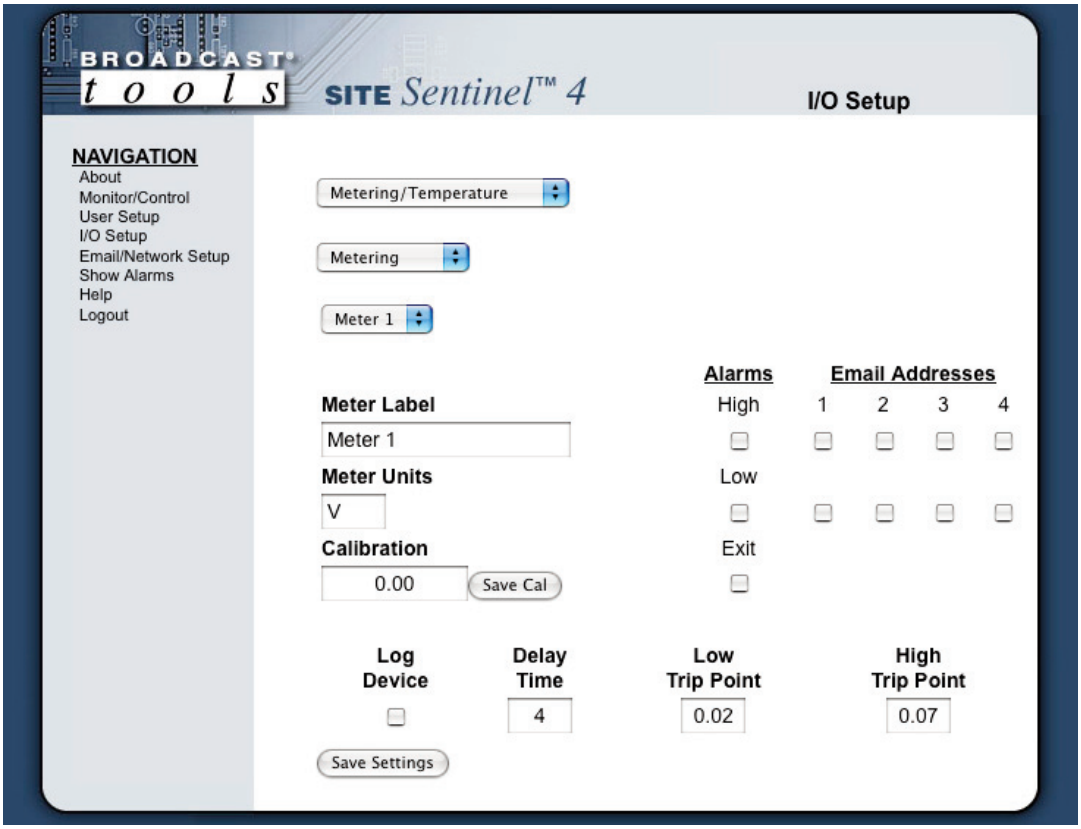
NOTE:

After any item has been changed, you MUST press the "Save Settings" button for your changes to be saved.

Web Setup and Operation

"I/O" Setup Page

Metering



I/O device selection drop-down:	Allows the user to select the I/O setup configuration pages.
Metering/Temperature drop-down:	Allows the user to select either the temperature or metering inputs to configure.
Metering input selection:	Select the metering inputs one thru four for configuration.
Meter Label:	Used to identify the metering input source.
Metering Units:	Label in engineering units, such as V = Volts, A = Amps, W = Watts, etc.
Calibration:	Enter the value of the desired meter reading.

NOTE: In order to calibrate, a valid DC sample voltage must be applied to each input. The largest number of digits that may be entered is five.

NOTE: The user MUST press the "Save Cal" button in order to store the value.

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Web Setup and Operation

"I/O" Setup Page
Metering

Alarms High:	This option enables the "High Trip Point" email alarm.
Email Addresses:	The "High" boxes labeled 1,2,3,4 allows the user to enable up to four different email addresses for high alarms.
Alarms Low:	This option enables the "Low Trip Point" email alarm.
Email Addresses:	The "Low" boxes labeled 1,2,3,4 allows the user to enable up to four different email addresses for low alarms.
Alarms Exit:	This option enables the emailing after exiting an alarm.
Log Device:	This enables the email logging of each metering channel.
Delay time:	The delay is in (0 to 999) seconds. This option specifies the wait time from when a value is out of range before an alarm is activated.
Low trip point:	This option specifies the LOW metering alarm set point.
High trip point:	This option specifies the HIGH metering alarm set point.

NOTE:

After any item has been changed, you MUST press the "Save Settings" button for your changes to be saved.

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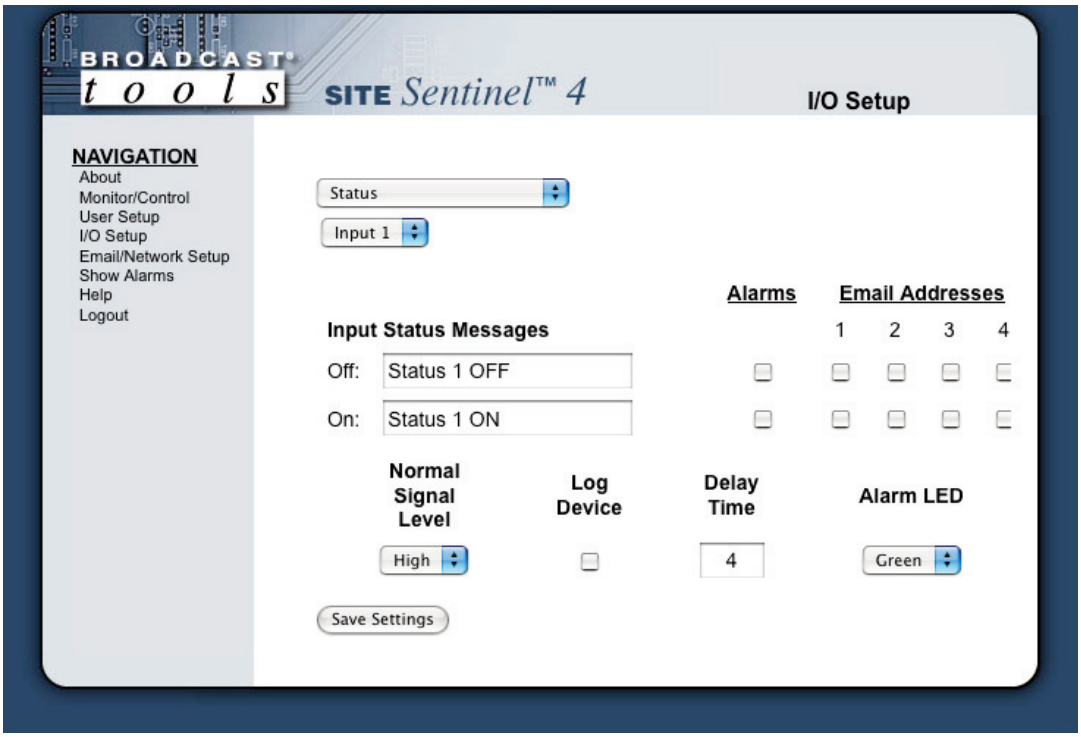
Web Setup and Operation

"I/O" Setup Page

Status



I/O device selection drop-down: Allows the user to select the I/O setup configuration pages.

Status input selection: Select the status inputs one thru four for configuration.

Input Status Messages: Used to identify the status input source for both an ON or OFF condition.

Alarms OFF: This option enables email alarms of an "ON" status input.

Email Addresses: The "OFF" boxes labeled 1,2,3,4 allows the user to enable up to four different email addresses for off alarms.

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Web Setup and Operation

"I/O" Setup Page

Status

Alarms ON: This option enables email alarms of an "OFF" status input.

Email Addresses: The "ON" boxes labeled 1,2,3,4 allows the user to enable up to four different email addresses for on alarms.

Normal Signal Level: This drop-down allows the selection of current logic level. This is normally set for High, but may be set to low.

NOTE: When the "Normal signal level" is set to HIGH = NO voltage is applied to the input (WET or no closure when configured for DRY), it's considered OFF, when voltage IS applied (WET or completed closure set to DRY) to the input, it considered ON.

NOTE: When the "Normal signal level" is set to LOW = Opposite function of the above description.

Log Device: This enables the email logging of each status channel.

Delay time: The delay is in seconds (0 to 99). This option specifies the wait time from when a status/logic input changes state before an alarm is activated.

Alarm LED: User defined color of LED on the Monitor and Control page when in an alarm condition.

NOTE: After any item has been changed, you MUST press the "Save Settings" button for your changes to be saved.

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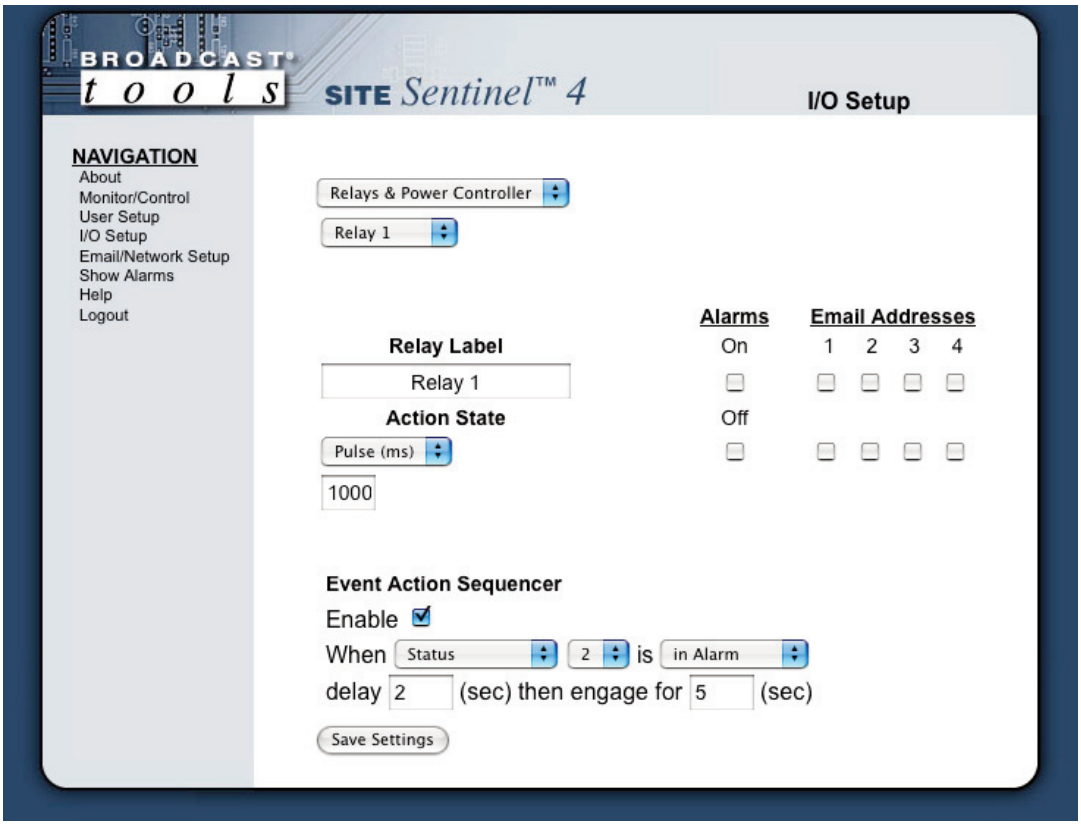
Web Setup and Operation

"I/O" Setup Page

Relays 1–4



I/O device selection drop-down:	Allows the user to select the I/O setup configuration pages.
Relay label:	Used to identify the device.
Action/State:	Determines how each relay will function. The relays may be configured for one of three states. 1 - Independent ON and OFF operation. 2 - Pulse with user configured pulse length from 0 to 9999 ms. 3 - Toggle (ON/OFF), one button operation.
Alarms OFF:	This option enables email alarms with an "ON" relay.
Email Addresses:	The "OFF" boxes labeled 1,2,3,4 allows the user to enable up to four different email addresses for off alarms.

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Web Setup and Operation

"I/O" Setup Page
Relays 1–4

Alarms ON: This option enables email alarms with an "OFF" relay.

Email Addresses: The "ON" boxes labeled 1,2,3,4 allows the user to enable up to four different email addresses for on alarms.

Event action sequencer: Used to perform a relay function when parameters are out of tolerance.

Enable: Enables the selected input to monitor for each relay.

Action: When (meter, status, silence sensor, power failure or temperature) (input number) is (in ? condition) delay (xx) seconds then engage for (xx) seconds.

Event action sequencer EXAMPLE: When (meter) (1) is (in High Alarm) delay (1) seconds then engage for (2) seconds.

In the above example: When [metering input] [1] is [in high alarm] for more than [1] second, (the desired relay) then engage for [pulse] 2 seconds.

NOTE:

After any item has been changed, you MUST press the "Save Settings" button for your changes to be saved.

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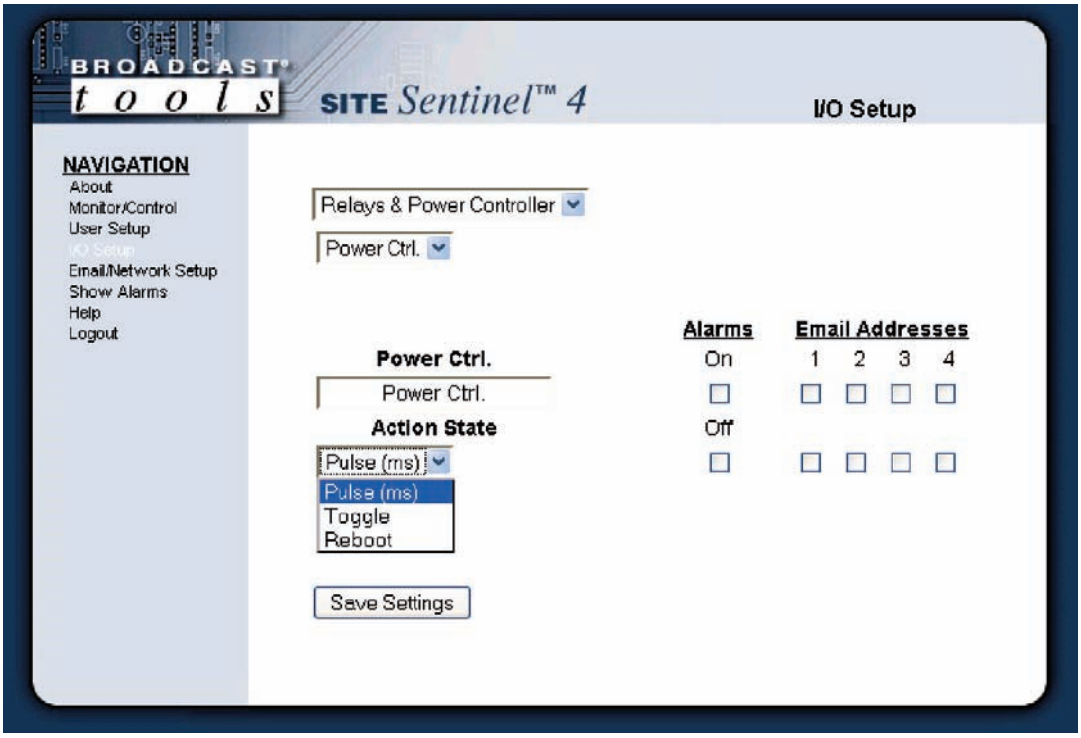
"I/O" Setup Page

Power Controller



I/O device selection drop-down: Allows the user to select the I/O setup configuration pages.

Power Ctrl label: Used to identify the device.

Action/State: Determines how the relay will function. The relay may be configured for one of three states.
1 - Pulse with user configured pulse length from 0 to 9999 ms.
2 - Toggle (ON/OFF), one button operation.
3 – Reboot. One button operation.

Alarms OFF: This option enables email alarms with an "ON" relay.

Email Addresses: The "OFF" boxes labeled 1,2,3,4 allows the user to enable up to four different email addresses for off alarms.

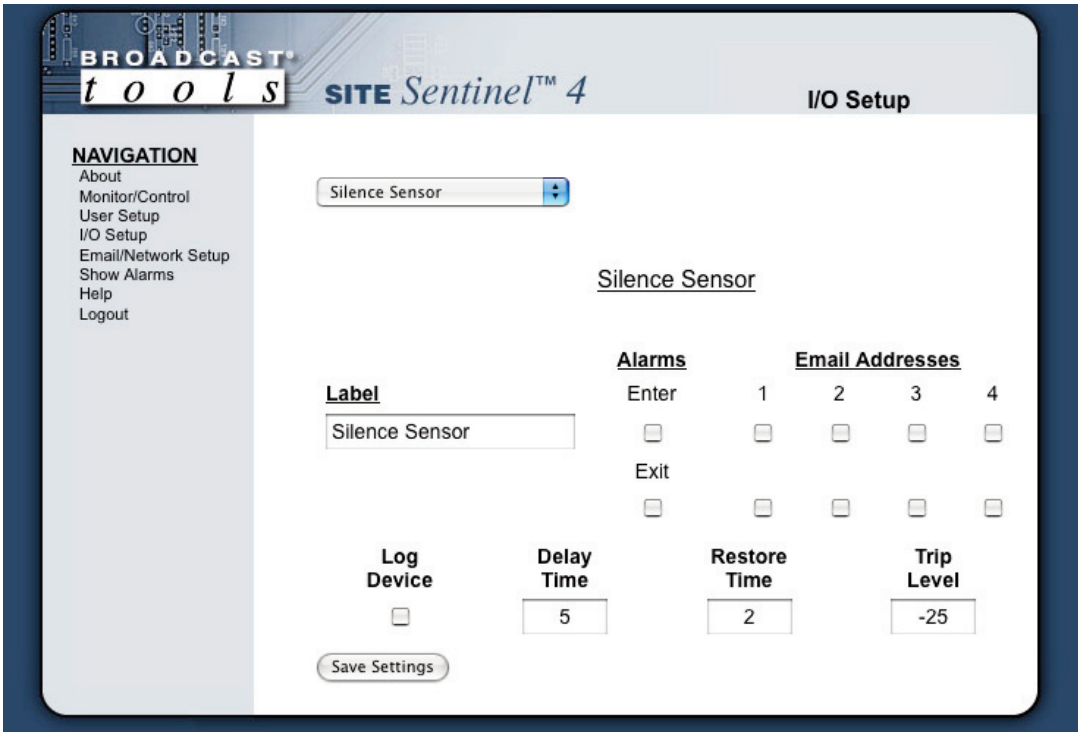
Alarms ON: This option enables email alarms with an "OFF" relay.

Email Addresses: The "ON" boxes labeled 1,2,3,4 allows the user to enable up to four different email addresses for on alarms.

NOTE:

After any item has been changed, you MUST press the "Save Settings" button for your changes to be saved.

"I/O" Setup Page
Silence Sensor



I/O device selection drop-down: Allows the user to select the I/O setup configuration pages.

Label: Used to identify the monitoring source.

Alarms Enter: When checked, generates an email alarm when the silence sensor enters an alarm condition, along with up to four email alarms.

Email Addresses: The "ENTER" boxes labeled 1,2,3,4 allows the user to enable up to four different email addresses for ENTER alarms.

Alarms Exit: When checked, generates an email alarm when the silence sensor exits an alarm condition, along with up to four email alarms.

Email Addresses: The "EXIT" boxes labeled 1,2,3,4 allows the user to enable up to four different email addresses for EXIT alarms.

Log Device: This enables the email logging of silence sensor status.

Delay Time (Sec): This is the time 0 (OFF) to 999 seconds (16 minutes, 39 seconds) from when the audio falls below the trip level set in the "Trip Level" box.

Restore Time (Sec): This is the time 0 (OFF) to 999 seconds (16 minutes, 39 seconds) required for valid audio to be present before the alarm is clear.

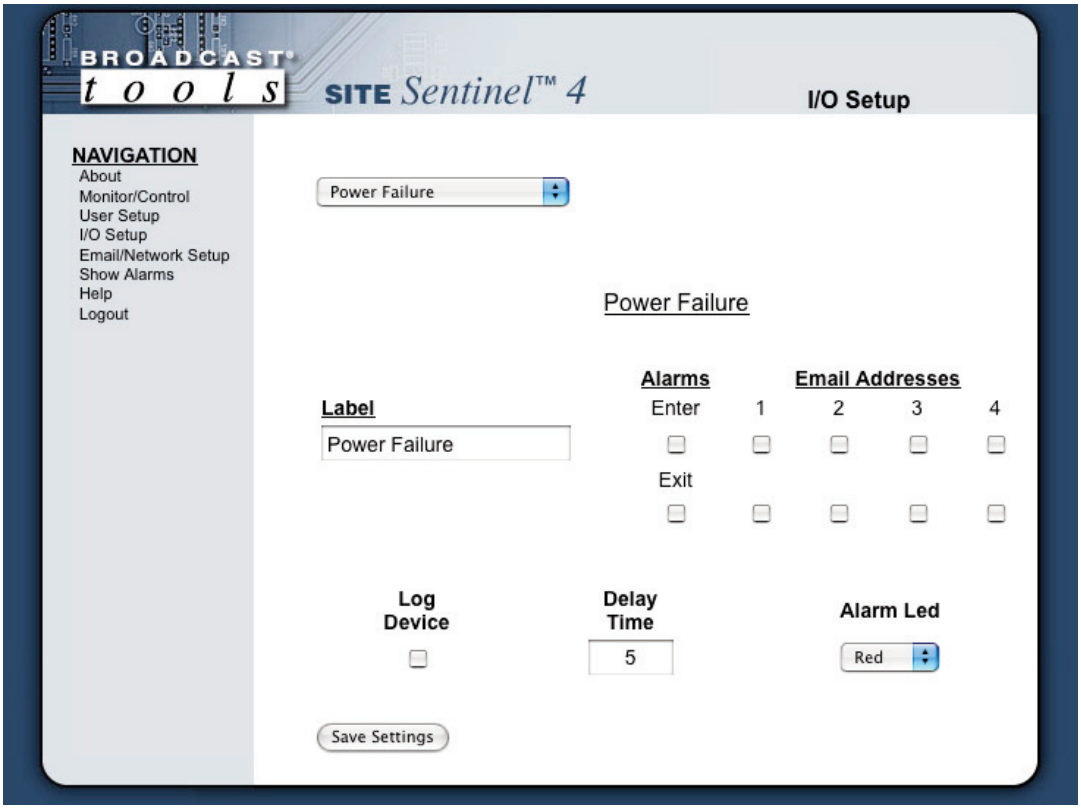
Trip Level (db): The input level at which the audio is considered invalid. This may be set between -25 and -35db below zero reference in 1dB steps.

NOTE:

After any item has been changed, you MUST press the "Save Settings" button for your changes to be saved.

"I/O" Setup Page

Power Failure



I/O device selection drop-down: Allows the user to select the I/O setup configuration pages.

Label: Used to identify the monitoring source.

Alarms Enter: When checked, generates an email alarm when the PF enters an alarm condition, along with up to four email alarms.

Email Addresses: The "ENTER" boxes labeled 1,2,3,4 allows the user to enable up to four different email addresses for ENTER alarms.

Alarms Exit: When checked, generates an email alarm when the PF exits an alarm condition, along with up to four email alarms.

Email Addresses: The "EXIT" boxes labeled 1,2,3,4 allows the user to enable up to four different email addresses for EXIT alarms.

NOTE:

After any item has been changed, you MUST press the "Save Settings" button for your changes to be saved.

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Log Device: This enables the email logging of the channel.

Delay time: The delay is in seconds. This option specifies the wait time from when the power failure input changes state before an alarm is activated.

Alarm LED: User defined color of LED on the Monitor and Control page when in an alarm condition.

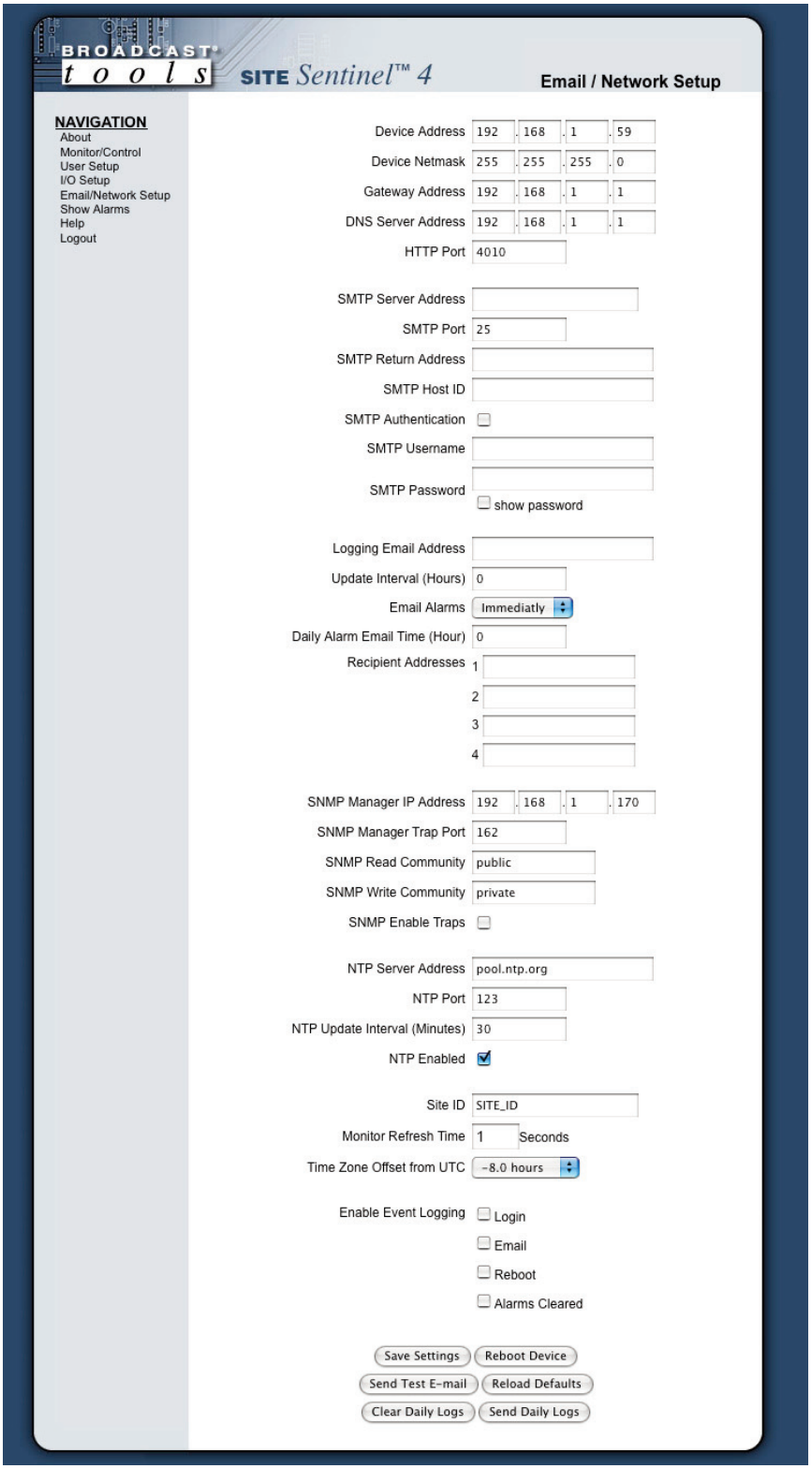
NOTE: After any item has been changed, you MUST press the "Save Settings" button for your changes to be saved.

Restoring Network Factory Defaults

NOTE: The Site Sentinel™ 4 factory defaults may be restored by holding the "Default" button IN, repowering the unit, wait for the SS and PF LED's to flash, then release the "Default" button.

Web Setup and Operation

"Email/Network Setup" Web Page



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Web Setup and Operation

"Email/Network Setup" Web Page

Device Address:	Enter a static IP address here.	Default: 192.168.1.55
Device Netmask:	Enter the Netmask here:	Default: 255.255.255.0
Gateway Address:	Enter the Gateway IP here:	Default: 192.168.1.1
DNS Server IP Address:	Enter your DNS address here.	Default: 192.168.1.1
HTTP Port:	Normally Port 80	Default: 80
SMTP Server Address:	The user can enter either an IP address in the xxx.xxx.xxx.xxx format or a URI in the form: smtp.comcast.net. In order to resolve the URI, a working DNS server must be present or its IP address entered into the system.	
SMTP Port:	Normally Port 25	Default: 25
SMTP Return Address:	Enter your return email here. If an email cannot be delivered, a message stating why will be sent to this address.	

NOTE: The user must enter the following items before an email can be successfully sent: SMTP Server Address, SMTP Port, SMTP Return Address, SMTP Host ID, SMTP username and SMTP password must be supplied if authentication is turned on and Recipient Address 1. The test email is sent to email recipient address 1.

The user should press the "Save Settings" button after entering the SMTP information before attempting an email test. If authentication fails, the email is not sent, please ensure that the username and password is correct.

SMTP Host ID:	Enter something here to identify the device.
SMTP Authentication:	When checked, Base64 SMTP authentication is supported by clicking on the checkbox.
SMTP Username:	Enter user name here.
SMTP Password:	Enter password here.
Logging Email Address:	IP address for the "Logging" email recipient (may be different from the four "Alarm" Recipient Addresses. Logging emails and Daily emails are sent to this address. Update Interval (Hours): This determines how often an update email is sent. Only devices enabled for logging will be included in this email. If set to 0 (zero), no logging email will be sent. Default: 0

"Email/Network Setup" Web Page

"Alarm" Recipient Address: Email Recipient 1, Email Recipient 2, Email Recipient 3, Email Recipient 4

SNMP Manager IP Address: This is the IP address of the SNMP manager. The system only accepts SNMP requests from this IP address, and will send traps to this IP address only.

SNMP Manager Trap Port: This is the port number that SNMP trap messages will be sent.

SNMP Read Community: This is the community name for Read-Only access.

SNMP Write Community: This is the community name for Read-Write access.

SNMP Enable Traps: When checked, trap messages will be sent. When Unchecked, no trap messages will be sent.

NOTE: A cold-start trap will be sent when the unit boots up if the SNMP Enable Traps is checked, otherwise trap messages are sent based on the device and enabled alarms.

NTP (Time) Server Address: Enter the NTP address here. Default: pool.ntp.org

NTP Port: Normally 123. Default: 123

NTP Update Interval (Min): Time between timing updates. Default: 30

NTP Enabled: Must be enabled for correct timing. Default: Enabled

Site ID: This is the Site Identifier that will be sent in each email.

Monitor Refresh Time (Sec): How many seconds the Monitor page refreshes. Shorter times may increase network traffic.

Time Zone Offset from UTC: Must be set for correct timing. Default: -8

Enable Event Logging: Enabling these checkboxes will generate an alarm, but will not send an email. If the system is configured for Daily Alarm emails, then that Daily Alarm email will contain the Event Logging items as well.

Login: Whenever someone logs into the system, the username and date/time will be logged.

Email: Whenever an email is sent, the type of email and date/time will be logged.

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"Email/Network Setup" Web Page

Reboot: Whenever the device boots, the date/time will be logged.

Alarms Cleared: Whenever the Daily Logs or Normal Alarms are cleared, the type of log cleared and date/time will be stored. When Daily Logs are sent, the Daily Logs are also cleared; this will cause an event log as well.

Save Settings: After pressing the "Save Settings" button, the device will reboot (If you changed the IP address, you must navigate your web browser to the new IP address (if the HTTP port was changed from port 80, be sure to add the new port number after the IP: xxx.xxx.xxx.xxx:port #). If you didn't change the IP address, then the web page will return to the login screen after the device reboots.

Reboot Device: When you press the "Reboot Device" button, the device resets, you must navigate your web browser to the new IP address.

Send Test Email: Press this button to send a test email. When the email has completed an alert box will pop-up indicating the status of the email and an error condition if the email was not sent correctly. If an email was not sent correctly please review your SMTP settings and correct as necessary.

NOTE: After you are done making changes to the Email/Network Setup page, you MUST press the "Save Settings" button to save your changes.

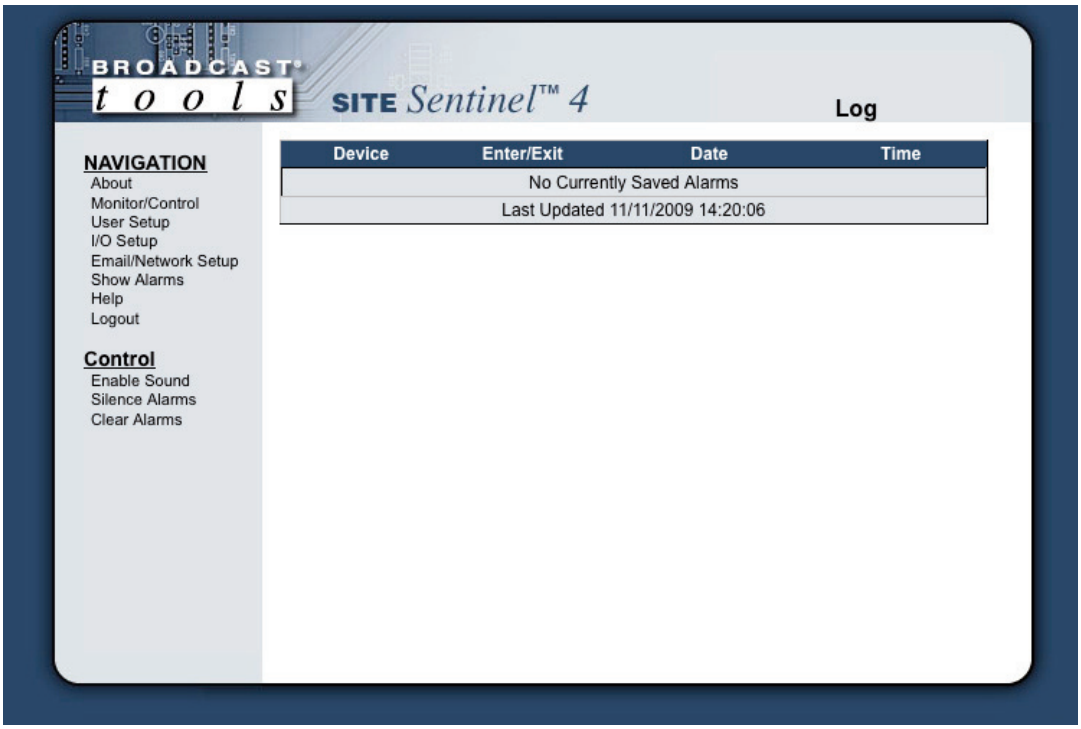
Reload Defaults: When you press the "Reload Defaults" button, the device resets, you must navigate your web browser to the new IP address (if the HTTP port was changed from port 80, be sure to add the new port number after the IP: xxx.xxx.xxx.xxx:port #).

Clear Daily Logs: When you press the "Clear Daily Logs" button, the daily logs stored in memory will be cleared. Keep in mind that if the Alarms Cleared Event is enabled, this event will post after the logs are cleared.

Send Daily Logs: When you press the "Send Daily Logs" button, the system will send the daily logs email and then clear those logs as ifthe correct time has expired.

"Show Log" Web Page

This page displays current alarms.



Device : Displays which device and/or devices triggered the alarm.

Enter/Exit: Displays if the alarm is entering or exiting an alarm condition.

Date: Displays what date the alarm was logged.

Time: Displays what time the alarm was logged.

NOTE: With the "admin" access level, the user may control all functions.

With the "Monitor/Control" or "Monitor" only access level, the user may view the "Show Log", enable/disable PC speaker sound and silence alarms.

NOTE: Shock Wave "Flash" must be installed and operating properly on your PC for the "Alarm Sound" to work when enabled.

"About" Web Page

The "About" Web Page displays the product name, firmware version numbers, and Broadcast Tools® Web site link.

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Specifications

Ethernet Interface:	RJ-45, 10Base-T or 100Base-TX, auto sensing with Link & activity indicator - Full/half duplex.
Control Logic:	Micro with non-volatile memory and web server.
Temperature Sensor:	Probe (optional) with 25-foot cable and 3.5mm T/R/S plug. -67°F to +257°F (-55°C TO +125°C).
Silence Sensor:	Stereo unbalanced 22K ohm inputs. Input level: -10dBu to +24dBu. Note: Summed to monaural.
Control Relays:	Four SPST normally open dry contacts, 30 VDC @1 Amp.
Power Controller Relay:	SPDT dry contacts. 30 VDC @ 1 amp.

CAUTION! For safety, never connect 120 Vac circuits to these relays!

Metering (analog) inputs:	Four - Buffered single ended (ground referenced) 0 to 10 VDC input range. 45 K ohm input Z. 10-bit resolution.
Status/Logic inputs:	Four - Optically Isolated. Internal jumpers for (WET), floating) external 5 to 24 VDC or internal 5 VDC source (DRY). Open collector, contact closures to ground or external logic source.
Power Failure input:	Optically-isolated, 5 to 12 VDC @ 15 ma, center positive. 2.1mm x 5.5mm coax type.
Connectors:	Metering (analog), status, relays and silence sensor audio input: Removable euroblock screw terminals, 2 x 2.1mm x 5.5mm coax type power jacks and 1/8" T/R/S mini-jack temp probe.
EMI / FCC Compliance:	See the Declaration of Conformity page. Operation is subject to the following two conditions: 1) This device may not cause harmful interference, and 2) this device must accept any interference received, including that which may cause undesired operation.
Protocols:	TCP/IP, UDP/IP, ARP, ICMP, SNMP, TFTP, Telnet, DHCP, BOOTP, HTTP, and AutoIP.
Required power supply:	7.5 VDC only @ 1 amp. 2.1mm ID x 5.5mm OD coaxial connector, center positive. Surge protected. Domestic PS supplied.
Size:	5.65" x 6.00" x 1.55", painted aluminum chassis w/ 4 - 6-32 mounting holes.
Weight:	2.0 lb.
Options:	* CE certified 240 VAC power supply. * RA-1, 1-RU rack shelf. Accommodates 3 units. * LR-5, 5-pole mechanical latching relay.

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LIMITED WARRANTY

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Broadcast Tools warrants to each Buyer of any item manufactured by Broadcast Tools that the item will be free from defects in materials and workmanship at the time it is shipped by Broadcast Tools if the item is properly installed, used and maintained.

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If Broadcast Tools is notified, in writing, of a failure of any item manufactured by Broadcast Tools to conform to the foregoing Limited Warranty within one (1) year following the date of the Buyer's acquisition of the item, and if the item is returned to Broadcast Tools in accordance with Broadcast Tools' instructions for confirmation by inspection of the defect (which at Broadcast Tools' election may include, without limitation, a requirement that the Buyer first obtain a Return Authorization number from Broadcast Tools, that the Buyer furnish proof of purchase in the form of an invoice and/or receipt, and that the Buyer prepay all freight charges associated with any return of the item to Broadcast Tools using such freight service as Broadcast Tools reasonably may specify), Broadcast Tools will repair or replace the defective item, or will refund the purchase price paid by the Buyer for the item. Broadcast Tools shall have the exclusive right to choose between these alternative remedies.

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Broadcast Tools, Inc.
131 State Street
Sedro-Woolley, WA 98284 • USA

360.854.9559 **voice** • 866.783.1742 **fax**
support@broadcasttools.com **e-mail**
www.broadcasttools.com **website**

Declaration of Conformity

The XPORT Device contained in the Site Sentinel™ 4 conforms to the following standards: (according to ISO/IEC Guide 22 and EN 45014)

Manufacturer's Name & Address:
Site Sentinel™ 4:
Broadcast Tools, Inc.
131 State Street.
Sedro Woolley, WA 98284-1503 USA

XPORT:
Lantronix 15353 Barranca Parkway, Irvine, CA 92618 USA
Declares that the following product:

Product Name Model: XPORT™ Device Server
Conforms to the following standards or other normative documents:

Electromagnetic Emissions:
EN55022: 1998 (IEC/CSPIR22: 1993) Radiated RF emissions, 30MHz-1000MHz
Conducted RF Emissions – Telecom Lines – 150KHz - 30MHz
FCC Part 15, Subpart B, Class B
IEC 1000-3-2/A14: 2000
IEC 1000-3-3: 1994

Electromagnetic Immunity:
EN55024: 1998 Information Technology Equipment-Immunity Characteristics
Direct ESD, Contact Discharge
Indirect ESD
Radiated RF Electromagnetic Field Test
Electrical Fast Transient/Burst Immunity
RF Common Mode Conducted Susceptibility
Power Frequency Magnetic Field Test

Manufacturer's Contact:
Site Sentinel™ 4
Broadcast Tools, Inc.
131 State Street
Sedro Woolley, WA 98284-1503 USA
Tel: 360.854.0608 Fax: 866.783.1742

XPORT
Lantronix:
Director of Quality Assurance
15353 Barranca Parkway, Irvine, CA 92618 USA
Tel: 949.453.3990 Fax: 949.453.3995

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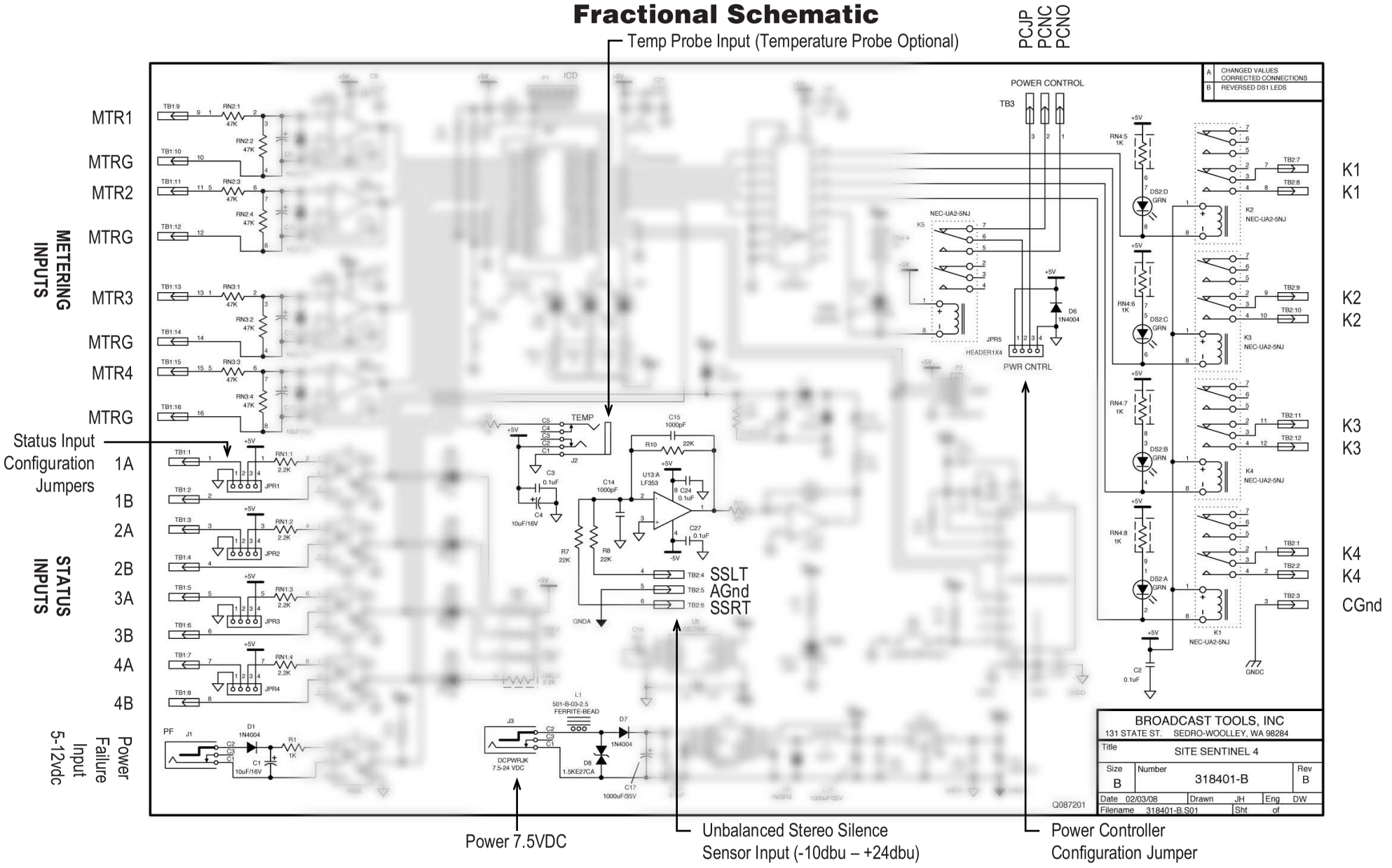
Fractional Schematic



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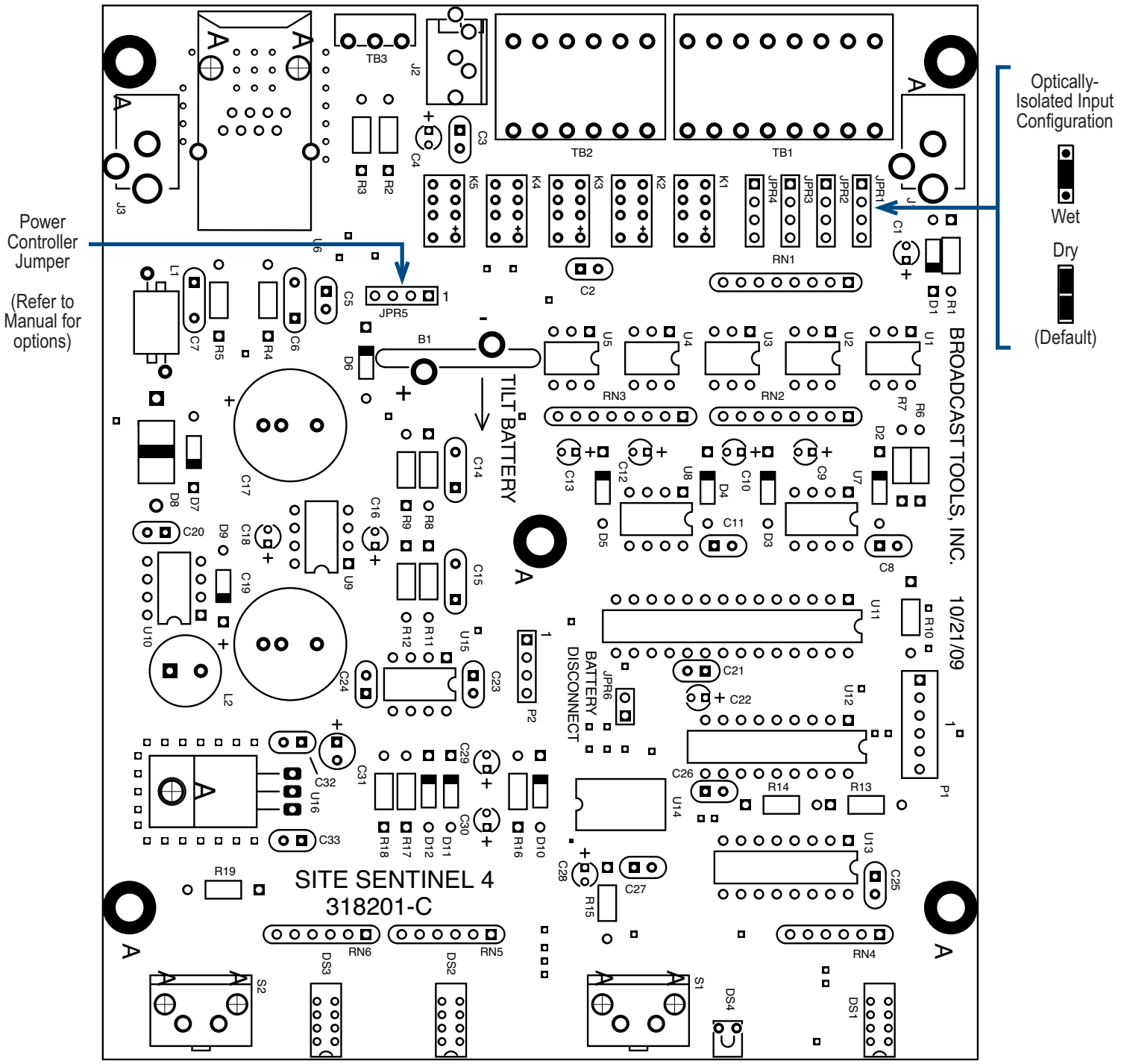
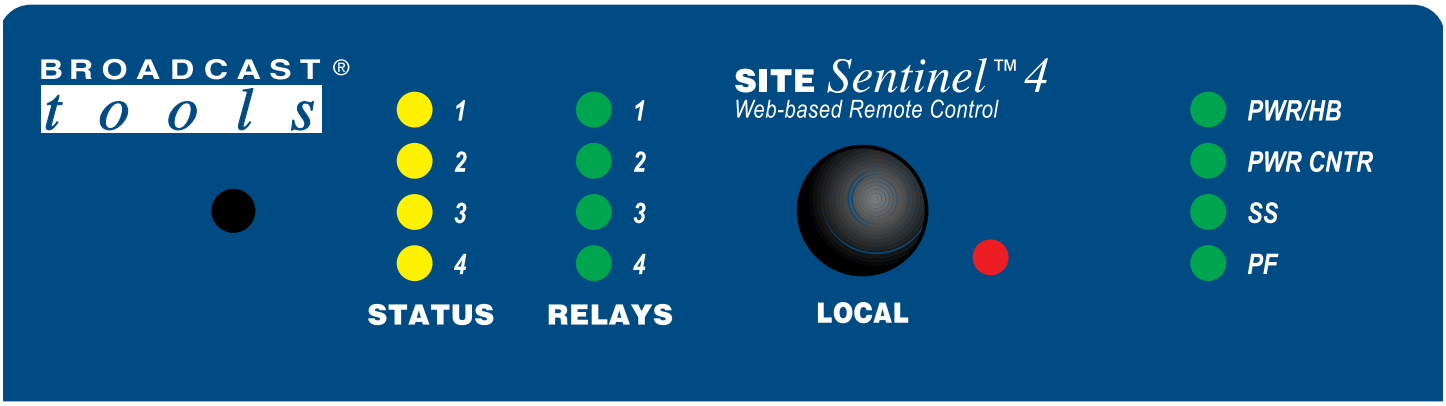
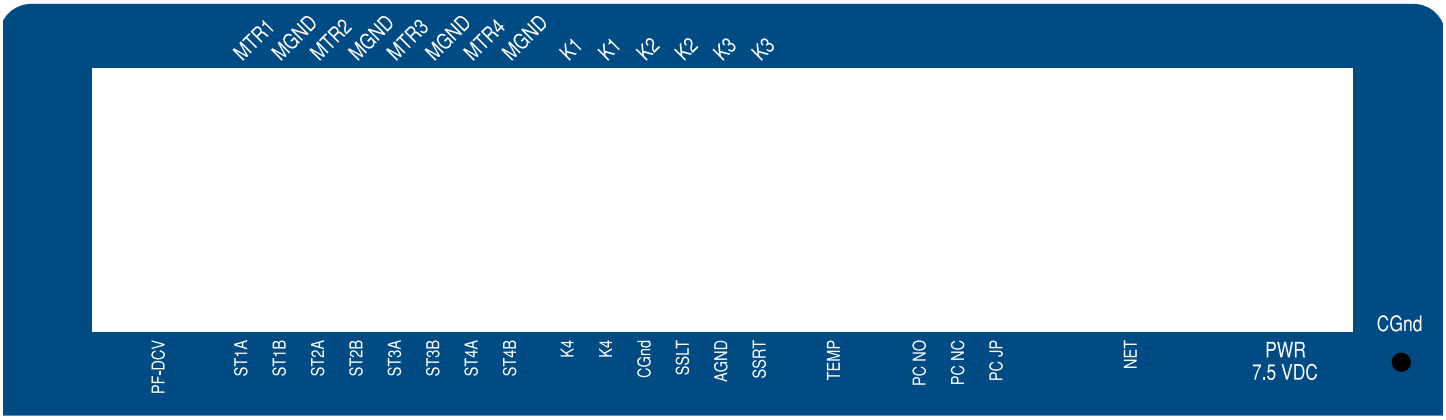
Site *Sentinel*™ 4

Jumper Layout



Front and Rear Chassis





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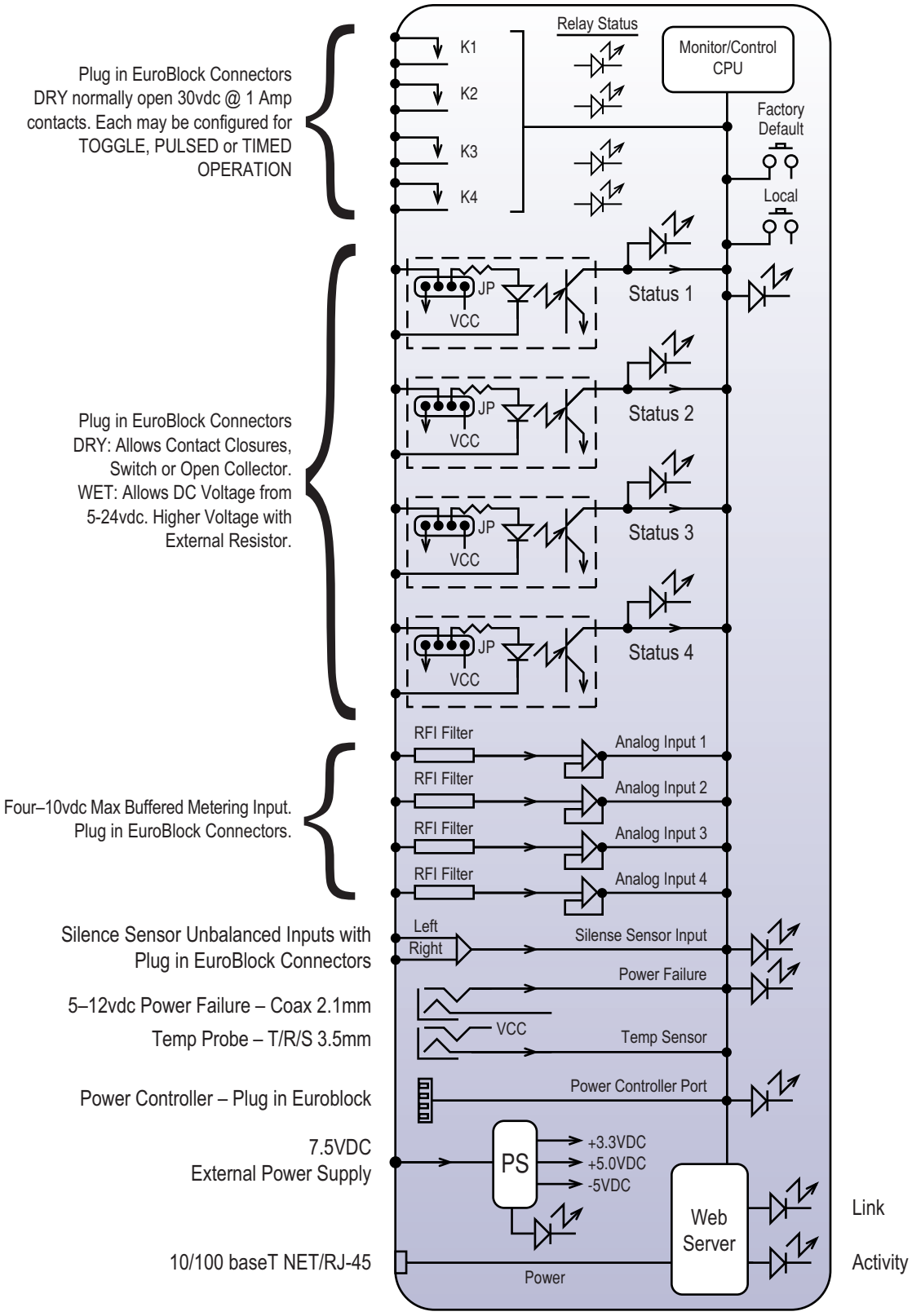
Functional Diagram



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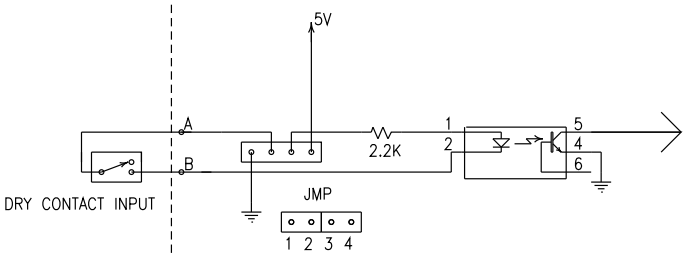
STATUS INPUT "DRY"



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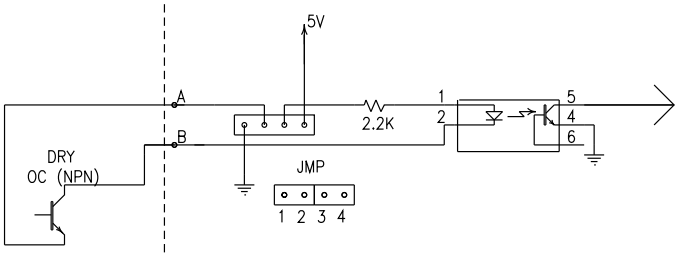

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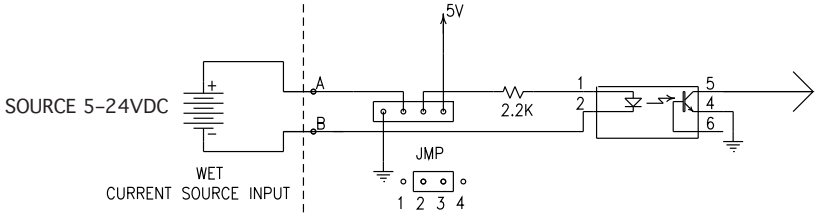
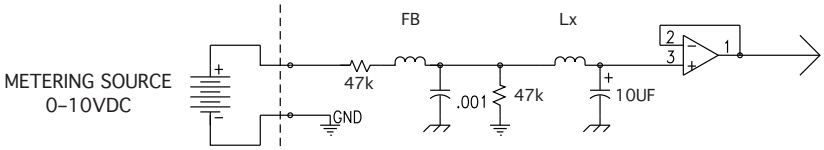
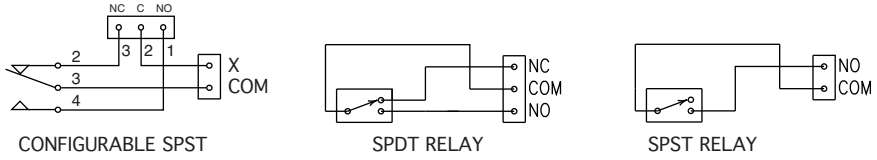


ANALOG INPUT



RELAY OUTPUTS



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